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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,485	07/31/2003	Matthew W. Holt	02708.0014.NPUS01	6408

7590 09/21/2005

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EXAMINER
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LEPISTO, RYAN A

ART UNIT	PAPER NUMBER
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2883

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/633,485

Applicant(s)

HOLT ET AL.

Examiner

Ryan Lepisto

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-9 and 11-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-9, 11-13, 15, 19, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 14, 16-18 and 20-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1, 6 and 8-9** are rejected under 35 U.S.C. 102(b) as being anticipated by **Yamazaki et al (US 4,653,846)** (Yamazaki). Yamazaki teaches a cable seal for sealing against a submarine environment having a pressure differential between the water (high pressure) and a repeater system (low pressure) (Fig. 8A, column 1 lines 10-26) and method of making comprising a metal-plated optical fibers (17, column 5 lines 57-58, the second fiber shown in not labeled) with a portion of the fibers coating being stripped (column 5 lines 55) (while the whole fiber can be still metal coated), a solder boding agent (10) bonded to the exposed metal-plated fibers (17) so to block the passage of fluids (column 6 lines 36-40).

2. **Claims 15 and 19** are rejected under 35 U.S.C. 102(b) as being anticipated by **Nakai et al (US 4,345,816)** (Nakai). Nakai teaches an optical fiber cable (Fig. 1) comprising a plurality of optical fibers (2, column 3 lines 33-34) each having an optical glass (silica is an optical glass) core (column 1 line 14), a first region wherein the fiber (2) has a part of a metal (column 1 lines 16-17) coating (L<sub>2</sub>) removed to expose the

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fiber, a third region wherein the fiber has at least a portion metal coating (right side, column 1 lines 61-62), an epoxy seal (5) bonded to both a second region (left side) and third regions wherein the fiber connects to electronics (column 1 lines 17-20).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 3-5, 7 and 11-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki as applied to claims 1, 6 and 8-9 above, and further in view of **Furusawa et al (US 4,389,086)** (Furusawa) and/or **Goodman et al (US 4,593,969)** (Goodman).

Yamazaki teaches the cable seal described above.

Yamazaki does not teach expressly the metal being chromium, nickel or gold, the bonding agent being epoxy or a silica optical fiber.

Furusawa teaches a metal-coated fiber made of nickel-chromium, copper and gold (column 5 lines 23-24) used in a feed-through that protects from the environment.

Goodman teaches a fiber protector that uses a bonding agent to protect a silica optical fiber (column 2 line 46 teaches silica being a suitable tube material since it has equal expansion to the glass fiber) that can be solder, epoxy or adhesive (column 2 lines 41-42).

The applicant further teaches that the metal-plated fiber may be made of any metal that can bond to epoxy enough to resist pressures (page 4 lines 21-24), other bonding agents beside epoxy may be used also as long it protects the fibers from breaking (page 5 lines 18-21) and that any suitable fiber core material may be used (page 4 lines 1-2).

Yamazaki, Furusawa and Goodman are analogous art because they are from the same field of endeavor, protecting optical fibers from outside environments.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the well known materials for the metal-plating, bonding agent and fiber core taught by Furusawa and Goodman since using such materials would be within what would have been obvious to one skilled in the art as stated by applicant.

The motivation for doing so would have been reduce cost by using well know, widely and cheaply produced and widely used materials.

4. **Claims 23 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki as applied to claims 1, 6 and 8-9 above, and further in view of **Byrd et al (US 2004/0146262 A1)** (Byrd).

Yamazaki teaches the cable seal described above.

Yamazaki does not teach expressly metal plating the fiber using chemical vapor deposition.

Byrd teaches metal-plating of an optical fiber by chemical vapor deposition (paragraph 0002).

Yamazaki and Byrd are analogous art because they are from the same field of endeavor, protecting optical fibers.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a widely used and generally known process in the art to metal-plate an optical fiber as taught, for example, by Byrd.

The motivation for doing so would have been to reduce cost and complexity by using a process that is widely used and well known in the fiber optic coating field.

#### ***Allowable Subject Matter***

5. **Claims 14, 16-18 and 20-22** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: These claims would be allowable over the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims because the latter, either alone or in combination, does not disclose nor render obvious a method of forming a cable seal using a bonding agent formed by placing a region of the cable in a mold and applying epoxy to the region for sufficient time to bond the epoxy to at least a portion of the metal-coated fiber or a fiber cable comprising a first conductive tube surrounding a first coated region, a second conductive tube surrounding at least a portion of a third coated region and a conductive housing surrounding at least a portion of a second un-coated region and the epoxy seal wherein

the tubes and housing form a continuous conductive path, in combination with the rest of the claimed limitations.

### ***Response to Arguments***

6. The amendment to the specification overcome as drawing objections.
7. The amendment to claims 21 and 22 overcomes the 35 USC 112 rejections.
8. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection necessitated by applicant's amendment since a metal-plated optical fiber is different than metallized layer formed on a cable.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Young et al (US 2004/0175092 A1) teaches a seal for protecting an optical fiber in a high-pressure environment.
10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Lepisto whose telephone number is (571) 272-1946. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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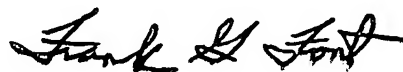
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Ryan Lepisto

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Date: 9/14/05



Frank Font

Supervisory Patent Examiner

Technology Center 2800